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TANGANYIKA Territory.

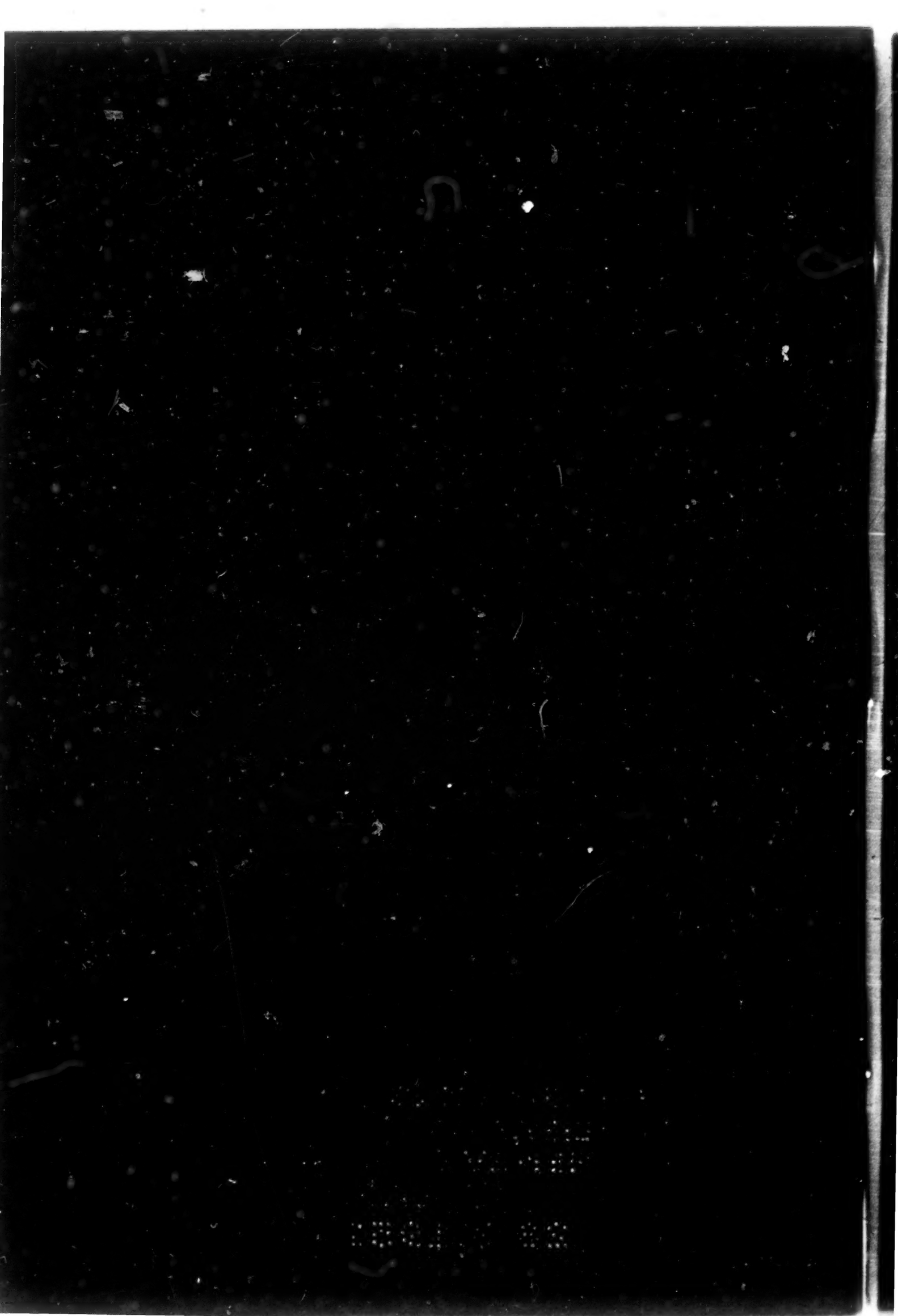
Annual Report

of the

Development Organization

1949

1950
PRINTED BY THE GOVERNMENT PRINTER
DAR ES SALAAM
Price Sh. 1/50



TANGANYIKA

Development Organization Annual Report for the year 1949

INTRODUCTION

At its last meeting held in March, 1949, the Development Commission decided to recommend to Government that the Commission should be dissolved, and that a Member for Development and Works should be appointed. Government accepted these recommendations and with the approval of the Secretary of State the appointment of the new Member has now been made.

2. This step was taken as, partly owing to changed circumstances and partly to the decision to undertake development works departmentally rather than through a separate works organization, it was generally agreed that the Commission could not effectively carry out the functions and duties originally assigned to it. The appointment of an additional Member of Executive Council with full responsibility for development has the advantage of more closely integrating the Development organization with other Government activities, particularly on the economic side.

3. The post of Deputy Chairman to the Commission has also been abolished and been replaced by that of Executive Officer, Development, working directly under the Member.

Thus the Development Organization though still retaining certain executive functions and a separate Budget is an integral part of the normal Government machinery.

4. Reports will no longer be issued half yearly but will now cover the period of the normal financial year, and will show the progress of all schemes financed from Development funds during that year. Fuller details of many of these schemes will be given in the normal Departmental Annual Reports of the Departments responsible for carrying them out.

5. Appendix I gives details of expenditure during 1949 and total expenditure to the end of 1949 under main sections of Development. From this it will be noted that 1949 has been a year of considerable progress, annual expenditure having risen from £851,000 in 1948 to £2,216,000 during 1949. This is mainly the result of the improvement in the staff position of most Departments and the freer flow of plant and materials, and also of the putting into execution of works on roads, water supplies and buildings for which surveys were being carried out and plans prepared in 1948.

6. Experience has shown that a number of schemes required revision and rising costs have necessitated further financial provision apart from any actual change in the scheme. The whole ten years plan is thus under review and a completely revised plan is now in course of preparation, and will shortly be published. In most schemes the effects of this revision have been taken into account in the preparation of the 1950 estimates which show an estimated expenditure for the year of £4,165,000.

SECTION I.—CONSERVATION AND DEVELOPMENT OF NATURAL RESOURCES

Agriculture and Animal Husbandry

1. *Training of Agricultural Instructors.*—Further progress continues with work on buildings and improvements to the Ukiriguru Instructors' School. All dormitory buildings are now complete and at least half of the old buildings have been evacuated. The school milking shed is nearly finished and the cattle boma has been occupied by oxen recently purchased.

Twenty acres of ground under cultivation is worked entirely by students who also cultivate a vegetable garden, orchard and forest nursery. Four work oxen and eight dairy cows are kept and it is intended to start poultry and bees in the near future.

There has been a steady improvement in discipline and general administration and it is proposed that all students will have to do at least two years probationary period as Instructors before being admitted to the school.

2. *Agricultural Training for Indians.*—The appointment of a suitably qualified Headmaster is still under consideration.

3. *Improvement of Supplies of Planting Material.*—The three tons of seed potatoes from Scotland which where planted in Iringa, gave a yield of only eight and a quarter tons due to insufficient rain, although the quality was good. The whole crop has been reissued for further multiplication.

Thirty samples of potato tubers received from Scotland for testing for blight resistance were planted at Lushoto in March and harvested in July. The final report on the trials is under consideration in consultation with the Director of Research, Scottish Society for Research in Plant Breeding.

A consignment of thirty-six almond trees were introduced from South Africa and planted in three lots at different altitudes in the Kilimanjaro area.

4. *Development of the Tobacco Industry.*—The Senior Tobacco Officer who is stationed at Iringa assisted the Iringa planters in all stages of tobacco cultivation but particularly with grading.

The progress in Kibondo District is outstanding. There was no organized tobacco production in 1947 and thirty-six tons fire cured leaf was sold this year. A new tobacco buying shed was built. Preparations for the wet season's planting has begun with distribution of seed and preparation of seed beds. Further trials are in progress in Ulanga, Eastern Province, to obtain further information on cultivation and curing in that area.

5. *Improvement of the Copra Industry.*—An Agricultural Assistant continued to be employed in Bagamoyo and one in Uzaramo on coconut field sanitation and their work has contributed to the abnormally large supplies of copra coming on to the market recently. Production this year is more than double the average output.

6. *Extension of the Ukiriguru Experimental Station.*—Further progress has been made in developing the new area of hill land and Mbuga, and some nine miles of new access roads have been constructed. Six three-roomed African quarters and fifty-four two-roomed quarters have been completed and twenty-four two-roomed quarters are under construction by the Public Works Department.

New mechanical equipment is on order and the programme of work in progress includes land resting trials, manurial trials, and testing ridging in various forms. Cotton selection work continues.

7. *Bukoba Coffee Sub-Station.*—Eleven two-roomed African quarters have been completed and work on the provision of a water supply and a cattle dip is in progress. The construction of Recorders' quarters and labour lines is nearing completion.

Clearing the land and experimentation concerning soil fertility continues and a nursery has been laid out.

8. *Soil Conservation, Eastern Kilimanjaro.*—Work has been confined mainly to the construction and repair of contour banks and the re-grassing of gully tops and sides under the supervision of African Levellers.

9. *Cotton Experimental Station, Ilonga.*—Good progress was made during the dry season with work on the European quarters, houses for the station staff and labour lines. The water supply scheme is completed, the pump installed and water is laid to one house and the labour lines from a reservoir which holds 40,000 gallons. The main experimental work of this station consists of cotton variety and strain trials and entomological problems on cotton, and the testing of strain and selection work continues. Insecticidal trials designed to test the number of applications necessary for protection at economic rates are in progress.

10. *Development of Tumbi and Mwanhala.*—Inadequate buildings are gradually being replaced by permanent ones and new seed stores have been made reducing greatly the loss by vermin and insect pests.

Labour lines have been built at Tumbi and a house and outbuildings for a demonstration peasant holding have been completed at Mwanhala. In addition a new pigsty has been built and dams enlarged to improve the water supply. The roads at Mwanhala have been completely realigned and Tumbi roads repaired. Machinary and equipment including a maize mill and a set of blacksmith's tools have been purchased.

Over 1,000 acres of tsetse bush have been cleared near the farms and arable and grazing land cleared and stumped. New fields have been prepared for cultivation and the Tumbi rice valley has been increased by three acres and one acre has been levelled for experiments.

11. *Development of Rice Production, Southern Province.*—An engineer of the Water Development Department visited Mahiwa to survey and advise on water supplies for irrigation at Mahiwa Station. A scheme for construction of a new dam is under consideration.

In addition to work on rice production the Station is investigating the possibilities of stock farming with a view to the development of dairying in the Southern Province and new clearings have been made for paddocks and additional cattle sheds built. Experiments are also being conducted on the relative advantages of planting cassava on ridges rather than on the flat as is commonly done at present.

12. *Improvement of Beeswax.*—The post of Beeswax Officer has been filled and arrangements made for the officer appointed to purchase necessary equipment in the United Kingdom.

13. *Fisheries.*—The officer surveying Lake Rukwa completed his investigations. As a result it was agreed that the number of fishery concessions on the Lake should be reduced from three to one, the remaining concessionaire being under obligation to provide adequate facilities for the processing of all fish produced by him and also under obligation to purchase all fish offered to him by African fishermen. In addition, a recommendation was made and is to be implemented, providing that the concessionaire shall operate a stated number of seine nets and permitting local Africans to operate also a fixed number of seine nets.

It is envisaged that the concessionaire will be responsible for the taking and processing of fish and that marketing of the dried product will be carried out by a separate marketing agency approved by a Lake Rukwa Fisheries Board which it is intended to establish.

On the completion of his investigations at Lake Rukwa the Fisheries Officer was transferred to Kigoma to make a survey of the Lake Tanganyika fishing industry. A 45-ft. Diesel fishing vessel has been ordered but pending its arrival work has been largely confined to the Kigoma District where practical assistance has been given to native fishermen in acquiring fishing gear and in the demonstration of new or improved fishing methods. In addition a relatively new fishing area of considerable existing and potential importance has been under investigation in the Malagarasi Swamps.

A second Fisheries Officer has been appointed and is stationed at Korogwe where he is investigating and developing fish culture potentialities and is arranging for the construction of fish ponds. Preliminary investigation has advanced sufficiently to enable a programme of work to be drawn up for the next three years. Pamphlet No. 1—Fishery Series "Preliminary Notes on Fish Farming" has been published.

An Anglo-Belgian Inland Fisheries Conference was held at Elizabethville in June, and the inaugural meeting of the East African Inter-Territorial Fisheries Research Committee at Jinja in August. The Fishery Officer, Kigoma, represented the territory at both these meetings, which were of considerable value from the point of view of co-ordinating and relating work in Tanganyika to similar work elsewhere.

14. *Development of Ufipa District.*—It is expected that developments in the Mpanda area will provide a market for and hence encourage agricultural production in the Ufipa District. All the buildings have been completed at the Sumbawanga Sub-Station, heavy bush cleared and a water furrow constructed. Crops have been harvested and yields have been fair considering the poor season.

15. *Rehabilitation of Uluguru Mountains.*—Following the completion of a survey in 1948 a revised scheme has been approved which is based on close European supervision in conjunction with intensive propaganda. The mountain area has been divided into three "parishes" each under the supervision of a Field Officer who will in turn be supervised by a team consisting of an Administrative Officer, an Agricultural Officer, and a Forestry Officer.

Agricultural, forestry, and soil conservation measures will be taken to rehabilitate and improve the land, and pilot mechanical cultivation introduced in selected settlement areas.

16. *Multiplication of Improved Varieties of Cotton.*—About 1,200 tons of U.K. 46 cotton seed will be available for distribution to five cotton growing zones in the Lake Province next season and it should be possible to provide sufficient seed for the whole Province in 1951. The yield of this strain is definitely superior to the strain in common use. Parallel to the development of U.K. 46 a further strain U.K. 48 is now being selected and arrangements made for its multiplication. Over twenty tons of this latter strain are now available and will be issued to growers on Kome Island and Bugumbikisu Peninsular, Karamu.

17. *Construction of Dams for Development of Rice Production.*—In all, twenty-nine dams have been built and a further fifteen are under construction in the Lake and Western Provinces with capacities ranging from 250,000 gallons to 12,000,000 gallons, and their average cost excluding Native Authority contributions of labour, etc., is £100. From ten years experience at Tumbi and Mwanhala it is estimated that these dams increase the paddy crop by 100 per cent over a period of years, and that the value of the increased crop over five years will pay for a dam.

18. *Houses for Field Officers.*—It was incorrectly reported in the last report that the house at Handeni had been completed. It is however under construction.

19. *Houses for African Agricultural Instructors.*—This scheme has now been completed with the building of ten houses in the Northern Province and six in the Western Province. The construction of these houses has enabled Agricultural Instructors to be posted to areas where the need for them is greatest.

20. *Luengira and Kitivo Irrigation Schemes.*—Surveys have shown that the Kitivo scheme is not practicable and it is not being proceeded with. At Luengira a pilot furrow was provided to serve the rice growing areas to test out the duty of water on approximately 100 acres under cultivation.

21. *Improvement of Furrows in Moshi Lowlands.*—The work on the improvement of the existing Chagga furrows with a view to preventing wastage of water and getting the water further down to the proposed expansion area continues under the supervision of an Agricultural Assistant.

22. *Purchase and Erection of a Saw Gin.*—The erection of the experimental Saw Gin will be completed shortly. It is proposed to put through this gin a trial batch of some 200 bales of cotton with the object of securing from cotton brokers and users their observations on the quality of the lint derived from the saw gin compared with that derived from the roller gin; and to compare relative out-turns of lint from seed.

23. *Reorganization of the Bukoba Native Coffee Industry.*—The marketing and handling of the African grown coffee crop by the Bukoba Native Coffee Board proceeded satisfactorily. At the end of 1948 one set of prices for the whole district was introduced thus discontinuing the system whereby prices varied in relation to transport costs.

In connection with the district hullery scheme, a draft layout of the machinery and equipment was forwarded to the manufacturers for their recommendations, and proposals for a standard layout were received. Nine hullery sites were selected and application made for rights of occupancy. It is expected that the first hullery will be completed in 1950.

In regard to the long term field programme, the work already started on the nine nurseries was continued. Nineteen Coffee Instructors were transferred from the Native Authority to the Board and a further twenty-seven recruits engaged and the Agricultural Department is supervising their training. Plans were made to secure the services of an European Officer for the coffee improvement programme. The Board sponsored a visit of Bukoba coffee growers to Moshi, where they were shown every phase of the activities of the Kilimanjaro Native Coffee Union.

24. *Chungai/Filimo Water Supply.*—The six mile pipe line has been completed and in consequence some considerable settlement is beginning well out into the mbuga.

25. *Local Development Loan Fund.*—The total amount of loans issued during 1949 is £20,895 in addition to which a grant of £500 has been made to a Native Authority towards the cost of building a road to serve a very productive area in the Pare Mountains for which the people themselves have made large contributions in the form of money and voluntary labour.

It is early yet to report progress on some of the schemes for which loans have been made during the period, but in one case, where a loan of Shs. 30,000 for one year has been made towards the cost of management and operation of 350 acres of coffee land, which is reverting to tribal usage, the first four months showed a profit of Shs. 13,940/-.

The Gombero Coconut Scheme towards which a loan of Shs. 27,000/- was made in 1948 is designed to become a co-operative effort by buying coconuts, maturing them and manufacturing copra in efficient kilns under competent supervision

Two substantial loans have been made, one to the Rungwe Co-operative Union for the construction of a second paddy store and one to the Mwanhala Stock Farm in the Nzega District towards the completion of buildings and initial running expenses.

Two misconceptions appear to exist in the minds of some applicants; one that anyone may borrow money for any purpose whatsoever without giving any form of security; another that only wealthy men of property may hope to receive a loan. A recent article in the African Press has attempted to explain clearly to would-be borrowers that tangible security in the way of cattle and property is not essential so long as the applicant's native authority considers him a reliable and hard-working man, with the ability to carry out the scheme for which he requires capital in the form of a loan, and is willing to sponsor the loan by a guarantee of payment of interest and eventual repayment of capital.

26. *Mechanised Cultivation Scheme: Northern Province.*—In view of the preliminary mechanical trials taking place in Sukumaland and the Rufiji valley it has been decided that it is not necessary to proceed with this particular scheme.

The mechanical trials now taking place indicate that the African farmer quickly appreciates the value of mechanical ploughing and the saving of labour involved, and is prepared to pay for such assistance.

27. *Kahama Agricultural Development Centre.*—This centre which was started with Native Administration funds is being developed on the same lines as the Ufipa Sub-Station. Building progress has been satisfactory and cattle have been purchased to form the nucleus of a milk herd.

28. *Printing and distribution of "Agriculture in the Cultivation Steppe".*—Proofs of the English and Swahili versions have been revised and returned to the printer and delivery of the publication is awaited from South Africa.

29. *Central Breeding Station Mpwapwa.*—The progress in building has been continued; the workshop and poultry unit buildings now being completed; and work has started on the food store.

Production of milk has increased with fewer cows in milk, the daily average of the Zebu herd being about 8 lbs. a day in addition to suckling by calves. The initial results secured from a trial in the gradual weaning of calves and maintenance of milk yield as opposed to quick weaning has shown promise. A serious outbreak of poisoning occurred in the weaner and bull-calf herds causing the loss of sixteen head of cattle. Careful investigations have been made as to the cause.

At the poultry unit, all birds are now accommodated in the new buildings and arks, and some work has been done on the fertility and hatchability of eggs. White Leghorns are giving better results than Rhode Island Reds. Harvest yields proved only fair owing to patchy rain.

30. *Development of the Ghee Industry: Lake Province.*—The Utegi School has received strong support throughout the whole period; classes being filled to capacity with trainees from North and South Mara. The Ubindo School has remained closed throughout the period owing to unfavourable seasonal conditions.

Progress in grading and marketing has been good, approximately 21,350 tins were graded and marketed, and of those, 2,500 reached clarified butter standard and 13,000 Grade I. The adverse season has affected production and many separator owners were not even getting sufficient milk to cover maintenance charges.

31. *Northern Province Demonstration and Experimental Farm.*—Plans for the main buildings have been prepared and approved, and the development of the estate and temporary accommodation is progressing satisfactorily. Collection of building materials and equipment is going ahead and plans for the improvement of the water supply are being considered. The supplies of labour increased and four African Labour huts have been completed. Coffee and grevillea clearing work is proceeding slowly and some progress was made with livestock but cattle suffered serious loss as the result of poisoning, and owing to the failure of the rains, grazing was poor and crops other than those under irrigation failed.

32. *Iringa Stud Farm.*—Iheme Farm was purchased and occupied at the beginning of the year. Work is proceeding on the repair of buildings, plans for new ones and layout of the farm. A brickfield has been opened and is now in use and the dairy, quarantine and African Assistant quarters are nearing completion. Equipment and machinery have been overhauled and delivery taken of a tractor and ancillary equipment. Eighty pigs taken over

with the farm are being maintained as a breeding unit and the cattle have been tuberculin tested. Arrangements have been made to purchase cattle in the United Kingdom.

33. *African Veterinary Training Centre: Mpwapwa.*—Difficulty has been experienced in recruiting staff to undertake the work of the Centre. Fourteen students were registered for the course which started in February this year. It has been decided that the course for African Veterinary Assistants should be extended to two years so that fuller training can be given.

34. *Demonstration Farm: East Kilimanjaro.*—It is anticipated that the farm in the Moshi District will become available for occupation at the end of this year.

35. *Veterinary Centres.*—Staff trained at Mpwapwa laboratory were posted to obtain further field experience before taking over supervision of Centres, two of which have now been opened in the Western and Northern Provinces.

36. *Improvement of Stock Routes. Colonial Development and Welfare Scheme No. D. 344.*—A survey has been carried out and work started on a stock route from the Lake and Western Provinces following their eastern boundaries down to the Central railway line. Watering points have been installed and heavy machinery is being used in the work of clearing the track. Livestock passing along this route will in the main be destined for the meat factory at Dar es Salaam. A trial mob of about 500 head of cattle have passed along it and some useful information has been collected which will facilitate future movements.

Elsewhere the main preoccupation has been to keep routes open to the passage of stock to the consuming areas as the drought has caused many waters to dry up. Efforts have been made to open up any possible small supplies of water and traders were advised to reduce the numbers in the mobs to be routed to the capacity of the waters available on the routes. The greatest trouble was experienced on the Singida-Kilema-Korogwe route.

The demarcation of the Singida-Katesh-Bubu-Dukahill-Kilema route was completed. Hand dressing stations have been established and a watering point installed at Endesh. Some opposition to the use of this route was made by traders so in order to allay their fears a test mob of fifty head of cattle was purchased and passed successfully along it for sale on the Korogwe market. The mortality was one per cent which is less than that by the old route where a mortality rate of four per cent to six per cent normally occurs.

Pasture Research.—Grazing experiments have continued according to schedule and bush clearing, including mechanical rooting, flattening of bush and mattocking has been carried on. Grass nursery plots have been extended considerably, and planting material of succulent fodder grass is now available. The rate of seed production from most species has proved disappointing. Twelve consignments containing twenty-five different species and varieties of seed for trial have been issued. These included two large consignments for the Iringa Stud Farm and the Northern Province Stock Farm, Engare. On the Tumbi Experimental Station, boundary traces were cut and work on the selective clearing and building of dams for water storage is now in progress.

Ulanga Rural Development Scheme.—The work of pasture clearing has continued and a new cattle boma is nearly completed. Brick making is in progress for other ancillary building. Ten heifers and thirty-two sheep were received from the Central Breeding Station, Mpwapwa, and crops of oats and wheat have been harvested, and thirty acres of valuable timber planted.

The "D" School building have been completed and the school will open in January 1950. The Dispensaries continue to do excellent work and the high attendance figures testify to their popularity.

37. *Rehabilitation of the Mlalo Basin.*—The first stage of the rehabilitation Scheme was to collect reliable information regarding the vital statistics of the area concerned and about the social, agricultural and other habits of the people as well as a study of their health and to set up a demonstration and trial of land utilisation with paid labour in a small controlled area. This has now been completed. The information has been collected and recorded by a team of Africans who were either seconded from Government Departments or locally recruited and trained. A census has been taken and records have been kept of all births, deaths, immigrations and emigrations, and from these figures a clear picture of conditions in the area has been obtained.

A complete reorganisation of land utilisation, based on stall feeding of cattle and a bare minimum of grazing on flat land only, has been carried out. In order to increase the fertility of the soil as well as protect it from erosion the system of "Hehe" ridging, i.e. ordinary ridging with a large core of organic matter, has been introduced. The following figures illustrate the altered use of the land following the introduction of the above policy :—

	Acres Old System	Acres New System
Forest	5	130
Bananas	50	130
Cultivated Land	295	330
Pasture	285	10
Fodder crops	Nil	30
Roads	Nil	5
Villages, paths, etc. ...	15	15
	650	650

The effect of the work done in the demonstration area has been apparent in a number of ways :—

1. The main stream of the area did not flood in the short rains nor dry up during the dry period as it has hitherto.

2. The November bean crop, planted on ridges, was harvested several weeks ahead of crops planted on the flat and good crop was obtained.

3. Fields which except in very wet years have not normally produced maize have done so this season.

4. The whole maize crops is about a month ahead of maize grown on the flat in similar areas and the crop is visibly better than elsewhere.

5. The livestock which are housed and stall fed off an acreage about one seventh of that used hitherto have remained in excellent condition and are giving over four times the amount of milk that they formerly produced.

It has become apparent from the information collected, that even in good crop years, the area as a whole is not feeding itself and that even with improved reorganisation of land utilisition and with extensions to the Kitivu rice areas, the present population could maintain itself on a bare subsistence level only, and the only solution seems to be the emigration of a portion of the population. If movement is to take place from the whole Western Usambara bloc it is considered that the fertile Luengera Valley will in all likelihood largely accommodate the surplus population of the South-Western side.

38. *Development of Sukumaland. Veterinary.*—The Malya stock farm building programme is now almost completed, and the water supply has been laid on so that the milking parlour is now in full use and the supply of water for buildings and cattle greatly eased. Preparations for 1950 crop plantings are under way and it is anticipated that some 250 acres will be put under grain crops. Although there have been some cases of disease, the farm livestock are mainly doing very well, and seventeen calves have been born and are being reared. A boar has been received from Mpwapwa. More farm machinery has been delivered including a mowing machine, 'power take off', and a hammer mill for crushing grain.

Agriculture.—Extensive touring was continued and the African subordinate staff maintained their efforts to oversee water conservation and anti-erosion measures. The most important and most unfortunate event was an outbreak of sleeping sickness in the area of the Mweli federation in west Mwanza. This constituted a serious setback to plans and was almost certainly due to a marked population trend, uncontrolled owing to staff shortage, which penetrated into fly-infested bush. The development staff assisted the District Commissioner and the Medical authorities with vehicular transport in the rapid evacuation of more than one hundred families to settlement blocks in fly-free country. At the end of August a start was made with Mbuga cultivation using the D2 Caterpillar and a small ripper; three to four acres were ripped daily. A satisfactory break of new land resulted. Three 50 h.p. Hanomag tractors purchased by the Director of Water Development arrived towards the end of August. Two of these, coupled to Ransome four-furrow disc ploughs, were put to work ploughing for local Africans. This work, so far very popular with the local population, is in the initial experimental stage with regard to costings, effect on weed growth, plant stand, control of striga, yields, etc. Ploughing of these mbuga lands is so fundamentally different from the Sukuma practice of cultivation that it is necessary to use the utmost caution. To date ploughing has been done for individuals only but by next season it is hoped to interest groups of small cultivators and band them together for group cultivation.

As regards water points, two standard two-tank hafirs are now under construction and are due for completion in 1950 in each of the Kwimba and Maswa districts. One of a similar capacity is also under way in Shinyanga. Additions and repairs to certain other water points have also been undertaken. Counts of population and stock were undertaken in many places, particularly in new settlement areas, with a view to checking seasonal movements. Results proved particularly interesting in view of the general drought conditions prevailing in Sukumaland this year. It is worthy of note that wherever new water points have been completed during this dry season the people have moved in and built their houses in anticipation of the dam or hafir filling during the next rains.

In the field of legislation, the Chiefs in Council have passed orders under Section eight of the Native Authority Ordinance covering such matters as tie-ridging, disposal of manure, conservation of stover, use of fuel and control of grazing.

Forestry.—During the first half of the period under review, work was concentrated on consolidating the 1948-49 plantations which had been badly hit by the drought, and in preparing new areas for planting in 1949-50. The 1948-49 plantings recovered well from the drought and survived with few losses, the only complete failure being at Mondo, where the drought was particularly severe. The results from cotton planted between the rows of trees were disappointing, the failure being mainly due to late planting.

Of 270 acres of land prepared in the chiefdoms of Nera, Sengerema and Nunghu, 150 were cultivated by means of light mechanical units, and many lessons were learnt from this experiment, the main one being that it is not economic to use light machinery for the first break on the hardpan soils of Sukumaland.

Following the appointment of a Field Officer to Nyankumbu, a Forest Guard Surveyor was sent to begin demarcation of Native Authority reserves in the miombo forest south of the Kasamwa-Geita road. Small scale reservation has also been started in the portion of the Old Shinyanga tsetse block which is shortly to be opened for settlement. At Igwata Experimental Station a further thirty-five acres has been ploughed and later tie-ridged in preparation for the 1949-50 programme. Heavy losses continued in the 1948-49 trial plots, but the experiments continue to yield useful information. Most of the eucalyptus species which showed great promise when protected from termite attack by gammexane later succumbed in large numbers, owing to the par-roots being attacked below the level of the gammexane application. Most of the indigenous species tried have survived.

In the hard pan soil treatment plots, interesting comparisons were obtained. It appears that sowing on ridges confers an immense benefit over sowing on the flat, regardless of whatever soil treatment is applied as a first operation. Further experiment is necessary to determine the factors contributing to this result.

39. *Development of Mbulu District.*—The office and store at Dongobesh has been constructed, thus completing the building programme in this area.

On the farm, the crops from the various trial plots have been harvested, and although final figures are not yet available, it is expected that valuable information will be gained. Tsetse clearing has been continued, and now almost all the 80 sq. miles west of the Marera gorge has been treated. Other areas have also been cleared or reslashed. Soil conservation work in the Ngadaidu area of North Iraqw was started in August and an area of tied ridges has been laid out as a demonstration. In South Iraqw, over 3,000 native fields have been surveyed for the construction of diversion ditches and similar work is also being carried out on Gorowa.

The Water Development Department continued work on the three dams on North Iraqw and the Bashay dam is now complete. In Bashay also a furrow for the irrigation of 150 acres has been surveyed and its construction half completed. The Setchet dam site at Ufarua has been cleared and awaits survey. Work continues on the pipes and cattle troughs for the Giyeda Kurim and Marera dams. A weir and furrow from the Bubu river has been constructed

with a view to the irrigation of some 500 acres for the planting of food crops as a further anti-famine measure. Many of the half acre blocks have already been taken up and cultivation is well in hand.

A six-mile road which has been made from Khamtanet to Maretadu in South Iraqw will facilitate resettlement when more land is cleared in this area.

40. *Rungwe Smallholdings Scheme.*—The object of this scheme, sponsored by the Moravian Mission at Rungwe is to utilise about 2,000 acres of Mission land for smallholding plots to be taken up by Africans irrespective of creed on condition they comply strictly with the land usage rules designed to make the best possible use of the land. The Mission has generously agreed that the title to the land at the end of the experimental period will pass to Government in return for an undertaking that the land will be used and allocated, in accordance with prevailing African custom, only so long as the users continue to comply with land usage rules laid down.

A survey of soils has been undertaken with the help of the Agricultural Department and the Superintendent of the Moravian Mission and his Agricultural Adviser have drawn up a plan of development. Areas for development as small holding plots have been demarcated and candidates for selection as small holders are being advised to make application.

41. *Kolo Rehabilitation Scheme.*—An impending famine in the district coupled with the urgent need for all available staff to be engaged on stepping up cultivation has also resulted in the implementation of this scheme being delayed. In the meantime work has started on the extension of existing contour banks in the Kolo area under the supervision of a Field Officer.

42. *Pilot Ranching Scheme: Mkata Plains.*—The object of the scheme which was approved in the middle of 1949 is to test the potentialities of the Mkata Plains for cattle raising and the effectiveness of the new drug "Antrycide".

Approximately 100 Zebu bulls and bullocks have been purchased and divided into three groups; the first group is treated with "Antrycide". The second "Dimidium Bromide", and the third is untreated. The whole experiment is under the control of the Chief Veterinary Research Officer, Mpwapwa, and a Stock Inspector is in charge of the cattle. It is as yet too early to report on the results of the experiment.

43. *Forestry Colonial Development and Welfare Scheme.*—Northern Division. Good progress was reported in road work both at Olmotonyi on a road to Olkokola and in the Sanya Juu-Simba region where a major bridge is required. It is hoped to mobilise the road-making equipment of a timber concessionaire to assist the making of the circular road in the North Kilimanjaro area. The tending of camphor regeneration on Kilimanjaro was extended by a further thirty-eight acres.

Tanga Division. The over-due thinning programme in the soft-wood plantations of the Shume-Magamba Reserve was continued.

Central Division. Staff was increased to enable areas selected for reservation, mainly in the Uzungwa-Ukwama-Mufindi Scarp reserve to be patrolled.

Southern Division. The main work was in connection with the examination of areas for reservation to fit in with the railway and O.F.C. plans. Air and ground reconnaissances extending from Songea to Kilwa were undertaken while three possible areas for future exploitation were examined. Three new forest Guards were appointed.

North Western Division. Examination of the dry forest in the Mpanda region was continued and extended. The presence of a Forester at Mpanda permitted the continuation of the work initiated during 1948 and its extension to a measure of preliminary investigation which will be useful to the various research branches.

Research. A Working Plans Officer has been appointed and has visited the Shume-Magamba and Kilimanjaro regions to initiate preliminary work. A Silviculturist has also been appointed and has been working as the forestry member of the Sukumaland team, where his investigations into land use in the dry forest zone will be most useful in connection with future silviculture work.

44. *Development of Water Supplies.*—The supplies for Kongwa, Malya, Ngudu, Mbulu and Nzega have been completed and work at Kiserawe, Mafia, Kasulu, Kahama, Mpanda and Sumbawanga has been started. At Nzega a successful borehole has been put down and connected to the piping system, thus alleviating a very acute water shortage.

Construction with heavy earth moving equipment.—There are now two mechanical units in use. Plant has started work on the dam at Kazima, which has an optimum capacity of 715,000,000 gallons, and which will help to alleviate the water shortage at Tabora. The other team of tractors is at Karatu constructing a third dam in the Mbulu District. A dam has been constructed at Kingolwira for the Prisons Department in connection with the new dairy project and in addition, a large number of small dams and hafirs have been sited in the Central, Western and Lake Provinces.

Piping.—The piping of water from springs in the hills and forests reserves to the lower areas for Africans and stock has been carried out in the Northern and Central Provinces, to increase the number of watering points over a wider area and to avoid undue concentrations of cattle with the consequent dangers of erosion. Pipelines and cattle troughs at Kandaga in Kondoa District and Mwika in Moshi District have been completed and also the pipeline from the Musa dam, which has yet to fill. At Meserani, Monduli District, the water has been carried on by furrow from the dam to a series of cattle troughs.

Boreholes.—A new borehole at the Ukiriguru Experimental Station supplements the old one and another at the Makutapura Leper Settlement in the Central Province has had an engine and pump installed. The borehole at Mvumi Mission produced adequate water which was saline but usable. In the Northern Province, three boreholes in the Sanya Plains produced good water but all attempts to tap underground water below the volcanic ash and lava at Loljoro have been unsuccessful even after boring to great depth. A borehole is being sunk for the Railways at Kaliua and water has been struck.

Wells.—Five wells have been sunk in the new Temeke Housing area for the Municipality of Dar es Salaam. These wells are shallow but should produce an adequate supply of water. Another well at Ukonga on the new

prison site just beyond the municipal boundary has been troublesome due to running sands. Three wells have also been sunk at Sumbawanga in connection with the outstation water supply there.

Fuller details of the work done during the year will be found in the Water Development Department annual report.

45. *Soil Conservation: Colonial Development and Welfare Scheme No. D. 962.*—Good progress has been made with building work at Tengeru Conservation Centre and most of the machinery ordered in 1948 has arrived. The African staff of drivers, surveyors and instructors has been increased. One of the Agricultural Assistants attached to the scheme is training Africans in simple survey work. Another Agricultural Assistant is training the drivers to give them essential experience in handling the machinery and the third Agricultural Assistant is Supervising soil conservation work in progress in Arusha District.

46. *Survey Division.*—Contour and details surveys have been carried out in Dar es Salaam, Morogoro, Kilosa, Mtanda Hill and Songea. The Engineering Surveyors have also been engaged on demarcating plots and road alignments in these towns and have done a considerable amount of levelling.

47. *Geological Survey.*—One senior geologist and two geologists have been transferred to the territorial staff. Three more geologists have been recruited, but have not arrived in the Territory. It appears to be impossible to recruit a suitably-qualified mineralogist-chemist, and a chemist had now been asked for.

Field work has begun on two areas South West of Songea and North of Arusha. The two geologists engaged on this are making excellent progress, and while the time is not yet ripe for discussing mineral possibilities, there is every reason for believing that this work will be amply justified.

48. *Mineral Development: Coal Investigations (Mukukulu).*—Drilling operations were completed with the last of the three boreholes in August. No seams other than those mentioned in the previous report were encountered. The final conclusion is that, although there exists one possibly mineable seam containing 7½ million tons of coal of fair quality, this field cannot be regarded as economic in view of the existence of the adjacent highly promising Ngaka and Kitiwaka Mchuchuma fields.

Coal Investigations (Kitiwaka-Mchuchuma).—The Diamond drill has been purchased and drilling awaits the completion of the road, on which work has begun. Geological survey of the field is now almost completed. Much pitting and trenching has been necessary to expose the coal seams. The results are very promising; seams up to twenty feet thick having been seen. Their lateral extent can be determined only by drilling and shaft sinking. There is reason to believe that the coal from some seams may have good coking properties, and the quality is good for African coals.

SECTION II.—COMMUNICATIONS

49. *Roads: Colonial Development and Welfare Scheme D. 869 and 822.*—Tenders were received for the Namanga-Arusha-Taveta road and the contract was awarded to Messrs. Sterling-Astaldi (East Africa) Ltd., who have started work. The contract has been extended to include the section of the Great North Road from Arusha to Makuyuni (the turn off to Mbulu and Oldeani).

Detailed surveys of the Dar es Salaam-Morogoro and Tanga-Korogwe roads have been completed and plans, specifications and quantities are sufficiently far advanced for tenders to be invited at an early date for Dar es Salaam-Morogoro and shortly after for Tanga-Korogwe. Survey of the Ruvu Pangani link is well advanced. Extended reconnaissance work on the Morogoro-Iringa road has shown that there is a feasible route eliminating Elpans Pass.

Orders for vehicles, tractors, graders and other mechanical plant placed with the Crown Agents are beginning to be fulfilled.

50. *Improvement to Aerodromes: Aerodrome Buildings.*—Two Mainhill Hangars completed and Belman Hangars under construction at Dar es Salaam. One Mainhill Hangar completed at Dodoma and erection of Mainhill Hangar at both Tabora and Arusha proceeding.

Runways.—The construction of the extension to the runway at Arusha has been completed and the levelling of runways at Mombo Aerodrome is nearing completion. Plans for possible future extensions and improvements at Tabora Airport have been submitted by the Consulting Engineers but no immediate action is contemplated. The Consulting Engineers have also submitted their second interim report on the Dar es Salaam Airport which is now under consideration by Government.

Investigations.—Continuous topographic investigations have been conducted to enable the Aerodromes Advisory Committee to arrive at an agreed overall territorial programme for the development of aerodromes. This programme has now been agreed and published, and will be implemented.

The Consulting Engineers are preparing plans and will shortly submit a report on Mtwara aerodrome.

51. *Telecommunications.*—Funds allocated for this purpose have now been handed over to the East Africa High Commission who will be responsible for all work on telecommunications in Tanganyika, Kenya and Uganda.

SECTION III.—SOCIAL SERVICES

52. *Medical Development: Colonial Development and Welfare Scheme D. 1033.*—The Secretary of State approved a free grant of £250,000 from Colonial Development and Welfare funds to finance a three year programme of medical development. Provision has been made in the scheme for a Nurses' Training School, a Tuberculosis Hospital at Kibongoto, a special Mental Hospital, Leprosy Settlements and rural Health Centres.

The services of a British firm of architects have been secured to design the Dar es Salaam Group Hospital and an architect of the firm will be arriving in Dar es Salaam in January 1950, to undertake preliminary investigations in regard to siting and requirements.

53. *Education: Colonial Development and Welfare Scheme D.871, D.418, and D.598.*—Preliminary work on the Songea Secondary School has been started under an Italian master builder engaged by the Education Department.

The Supervisor of School Buildings has begun building the Headmistress's house for the African Girls' and Women's Training Centre, Bwiru and on completion of this will start on the Teacher Training Centre, Butimba, in connection with which the building of a new road is in hand.

Extensions to the Dar es Salaam Secondary School are being carried out by the School's industrial apprentices. They have completed one dormitory block, have raised another to roof level and are beginning on a classroom block. Extensions to buildings are either completed or proceeding at Malangali, Bwiru, Nyakato and Mahuta Schools.

Work on the Machame School buildings has been largely completed, and considerable progress has been made on the Mbeya School.

54. *Training of Ex-Servicemen: Colonial Development and Welfare Scheme D. 833.*—Up to date 1,837 trainees have been passed out of the Mgulani Centre of whom some 400 have passed out in 1949. There are 372 men in training at present. Employers' requirements are still very far from being satisfied particularly in the building and allied trades, but a register is kept and whenever opportunity occurs tradesmen are sent to prospective employers. Firms from the United Kingdom are taking great interest in the possibility of being able to take in batches of trainees from the Centre for "on training".

A certain percentage of non-ex-Askari who were accepted into training have proved to be good material and show great promise. A few have completed their courses and have gone into employment, where they are proving satisfactory.

55. *Social Centres: Colonial Development and Welfare Scheme D. 455.*—Centres at Lindi and Mahenge have been completed and the building of the Njombe Centre finished. A Native Authority building at Lushoto has been purchased and converted into a club.

The Secretary of State has approved the extension of this scheme for a further period of two years to enable the building programme to be completed.

56. *Social Development.*—Six African Assistants have been appointed, trained and posted to Same, whence they have been sent to visit the Mlalo Basin Scheme. The Literacy Primers have been written and illustrations have been completed by the Art School at Makerere College. The Primers are now being printed by the Survey Department. Equipment has been ordered and is now arriving.

The future organisation and control of the Social Welfare Department, has been the subject of a special report which is now under consideration.

57. *African Urban Housing.*—Construction of sixty houses by contract in Dar es Salaam has been completed, sixty houses are under construction and the contract for a further sixty-one has been let.

SECTION IV.—MISCELLANEOUS

58. *Town Planning Unit.*—The Chief Town Planning Officer arrived in the Territory in October and by the end of the year the Town Planning Division of the Department of Lands and Mines had taken over the whole of the duties previously carried out by the Planning Consultants, Messrs. Sir Alexander Gibb & Partners. This Division is not yet, however, anything like fully staffed.

The Town Planning Ordinance has been completed in draft and submitted to Government for consideration.

The draft Planning Scheme for Dar es Salaam has been completed up to the report stage by Sir Alexander Gibb & Partners before their handover, and copies of the report and plans are now being made departmentally. The Draft Scheme should be ready for submission to the Municipality by January. In the meantime, considerable areas of the town are being planned in detail, in advance of the approval of the Draft Scheme, in order to cope with the heavy and continuous pressure of development, particularly in areas zoned for high density housing.

At Mtwara, the first phase of development work has been decided upon, and detailed large scale plans of this phase are now being prepared so that the sites can be demarcated.

Apart from the preliminary Schemes which have been prepared and submitted for the towns of Tanga, Mwanza, Arusha and Moshi, a large amount of advisory planning work has been carried out for most of the townships in the territory and small sections of many towns have been planned in detail in advance of the general planning schemes in order to keep development moving on proper lines.

Schemes for Lindi, Dodoma and Morogoro are receiving more detailed consideration. Owing to shortage of staff the Division is concentrating on day to day questions of advisory and development control work in order that the urgent development may proceed.

59. *Township Development: Dar es Salaam.*—The Consulting Engineers have submitted their interim report on the investigation of new sources of water supply and authority has been given to them to proceed with the first stage of their proposals. Contract documents have been drawn up and tenders invited. Extensions of the distribution mains to new development areas are under progress.

The Consulting Engineers have drawn up detailed plans for sewage disposal and tenders for the work have been invited. A Resident Engineer has been appointed and has arrived.

The Consulting Engineers have been requested to prepare plans for surface drainage for specified areas.

Other Townships.—Improvement of the Moshi roads has been effected and arrangements made for the construction of new roads at Tanga to serve the new development area. Water supply investigations are proceeding departmentally at Tanga, Lushoto, Kilosa, Ujiji and Mbeya, and at Mtwara, by the Consulting Engineers.

60. *Public buildings and Works.*—177 European houses have been built, of which seventy were completed in 1949, and the building of a further 163 has been authorised and work on these has commenced. The construction of Asian houses is in progress in Dodoma, Kongwa, Mwanza and Iringa, and arrangements are being made for construction in other townships.

New Public Works Department Depots are being built at Mbeya, Lindi, Dodoma, Tabora, Mwanza, Mtwara and Arusha, and orders have been placed with the Crown Agents for machinery and plant.

Estimated Expenditure under the Development Budget to the 31st December 1949

Details of Expenditure	Actual Expenditure to 31.12.47	Actual Expenditure 1948	Estimated Expenditure 1949	Total
Section I—Conservation and Development of Natural Resources				
Agriculture and Animal Husbandry	167,138	166,894	280,418	614,450
Forestry	890	8,846	18,790	28,526
Development of Water Supplies	141,237	142,845	177,080	461,162
Soil Conservation	74	1,805	24,858	26,737
Surveys	–	734	5,360	6,094
Geological Survey	–	4,039	17,940	21,979
Mineral Development	–	1,193	22,125	23,318
Total Section I ...	309,339	326,356	546,571	1,182,266
Section II—Communications				
Roads	–	13,437	434,000	547,437
Improvements to Aerodromes	22,169	24,647	20,000	66,816
Telecommunications	14,068	29,247	200,000	243,315
Total Section II ...	36,237	167,331	654,000	857,568
Section III—Social Services				
Public Health	–	1,940	9,328	11,268
Education	119,065	93,720	246,581	459,366
Social Centres	21,672	968	2,360	25,000
Social Development	–	–	6,400	6,400
Total Section III ...	140,737	96,628	264,669	502,034
Section IV—Miscellaneous				
Township Development	13,094	26,642	118,365	158,101
Public Buildings and Works	79,480	192,392	474,850	746,722
Land Settlement	6,505	7,946	10,010	24,461
Subventions	–	14,334	14,913	29,247
Development Commission	2,000	19,903	7,858	29,761
Land Acquisition	–	–	125,000	125,000
Total Section IV ...	101,079	261,217	750,996	1,113,292
Total ...	587,392	851,532	2,216,236	3,655,160